

Appl. No. 10/062,833  
Reply to Examiner's Action dated July 12, 2005

**REMARKS/ARGUMENTS**

**I. Rejection of Claim 12 under 35 U.S.C. §112**

The Examiner rejected Claim 12 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner stated the claim contained subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time the application was filed. Specifically, the Examiner stated that the specification does not disclose a mapping so as to ascertain the data. The Examiner also stated that it was not clear as to where the "mapper" is implemented and whether it is in the transmitter or receiver.

With respect to the Examiner's statement that the specification does not disclose a mapping so as to ascertain data, the Applicant respectfully calls the Examiner's attention to paragraph 0031 of the application, where mapping is disclosed and explained. With respect to the Examiner's statement that it was not clear as to where the "mapper" is implemented and whether it is in the transmitter or receiver, the Applicant respectfully calls the Examiner's attention to the fact that a "mapper" is not claimed in Claim 12. As to whether mapping occurs in the transmitter or receiver, the Applicant calls the Examiner's attention to the sentence starting on the seventh line of paragraph 0031 of the application where it is noted that "... mapping constitutes a predetermined arrangement or agreement whereby an encoded data message or signal has a specific meaning attributable to it that is ascertainable when the encoded data message or signal is decoded or demodulated." Based on this passage, one embodiment of the invention provides for mapping to occur in the transmitter

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

to send data so that it can be decoded or demodulated at the receiver. Of course, any embodiment of the invention where mapping is involved will be within the intended scope of the present invention. Inasmuch as Claim 12 does not contain subject matter that was not described in the description, the Applicant respectfully requests the Examiner to withdraw this rejection of Claim 12 under 35 U.S.C. §112, first paragraph.

## **II. Rejection of Claims 11-20 under 35 U.S.C. §112**

The Examiner rejected Claims 11-20 under 35 U.S.C. §112, first paragraph, as failing to comply with the enabling requirement. Specifically, the Examiner states that independent Claim 11 discloses that “.... each of said time slots having a unique phase and time position....” and that, while each of the time slots has a unique time position, the time slot itself does not have a unique phase position. The Applicant respectfully calls the Examiner's attention to paragraphs 0027 through 0030 of the application. Please note that in paragraph 0028 of the application, the statement is made that, to demodulate a signal, it is necessary to sample the real part of the received signal at the peak locations as well as shifting the phase of the sampling signal from “one time slot to the next” such that it would agree with the expected phase of a pulse “if it should occur at that slot” location. Thus, “that slot” has its own unique time and phase so that a pulse can be identified if it satisfies both the requisite time and pulse parameters for that slot. Thus, each slot has its own unique time and phase position. Inasmuch as independent Claim 12 does not contain subject matter not enabled by the description, the Applicant respectfully requests the Examiner to withdraw the

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

rejection of Claim 11 under 35 U.S.C. §112, first paragraph, as well as the rejection of Claims 12-20, all of which are dependent on Claim 11.

## II. Rejection of Claims 11-20 under 35 U.S.C. §103

The Examiner has rejected Claims 11-20 under 35 U.S.C. §103(a). The Examiner rejected Claims 11, 13-17 and 19-20 as being unpatentable under 35 U.S.C. §103(a) over the Applicant Admitted Prior Art (AAPA) in view of U.S. Patent Application Publication No. 20020064245 by McCorkle. The Examiner rejected Claim 12 as being unpatentable under 35 U.S.C. §103(a) over the AAPA in view of McCorkle and further in view of U.S. Patent No. 6,882,689 to Maggio, *et al.* (Maggio). Claim 18 was rejected by the Examiner under 35 U.S.C. §103(a) over the AAPA in view of McCorkle and further in view of U.S. Patent No. 4,677,656 to Burke, *et al.* (Burke).

As the Examiner is no doubt aware, determination of obviousness requires consideration of the invention considered as a whole; the inquiry is not whether each element exists in the prior art, but whether the prior art made obvious the invention as a whole. Furthermore, there must be some suggestion or teaching in the art that would motivate one of ordinary skill in the art to arrive at the claimed invention; a reference that teaches away from a claimed invention strongly indicates nonobviousness. In addition, as noted by the United States Court of Appeals for the Federal Circuit in the recent case of *In re Sujeet Kumar*, 04-1074 (Fed. Cir., August 15, 2005), "... the prior art must enable a person of ordinary skill to make and use the invention."

Moreover, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

With respect to the rejection of Claims 11, 13-17 and 19-20 under 35 U.S.C. §103(a) over the AAPA in view of McCorkle, the Applicant respectfully submits that (1) the prior art does not contain each element of the claimed invention; (2) no suggestion or motivation to combine the references has been identified; and (3) the references do not enable a person of ordinary skill in the relevant art to make and use the present invention as required by *In re* Kumar. The following analysis of McCorkle is directed to independent Claim 11, on which Claims 13-17 and 19-20 are each respectively dependent.

McCorkle discloses a mechanism and method for self-canceling noise generated in wireless digital communications using an ultra wide bandwidth (UWB) receiver and for providing multi-mode operation for the receiver. Noise is canceled by generating a first set of wavelets in a same phase as an incoming signal, and a second set of wavelets with an opposite phase as the incoming signal. The received signal and the generated wavelets are mixed and the result integrated such that the integrated output tends to zero. The multiple modes of operation allow the receiver to process multiple types of waveforms. The modes may be chosen by a user-selected switch, a waveform-detection based switch, or the like. (Abstract). It is noted in paragraph 74 of McCorkle that the encoder 350 receives data from the radio controller and interface 303 and preprocesses the

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

data so as to provide a timing input for the UWB waveform generator 345 to produce UWB pulses encoded in shape, or time and shape, to convey the data to a remote location. These shapes include, (1) bi-phase modulated signals (+1, -1); (2) multilevel bi-phase signals (+1, +a, -a, -1); (3) quadrature phase signals (+1, -1, +j, -j); (4) multilevel quadrature phase signals (+1, j), (-1, j), (+a, -aj) . . . , (5) pulse position modulation (PPM) signals (same shape pulses transmitted in different candidate time slots); and (6) any combination of the above waveforms, such as bi-phase channel symbols transmitted according to a PPM signaling scheme. Notwithstanding the alleged versatility of the device described in McCorkle, nowhere does McCorkle teach or suggest that data can be encoded on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position.

In paragraph 0076 of McCorkle a statement is made that data may be encoded by pulse position modulation and that, in other UWB communication schemes, it is possible to manipulate the shape of the pulses so that the data may be encoded by exploiting the shape of the pulses. Examples given include, a binary phase signal set, quadrature phase signal set, or even a multilevel signal set as would be the case for multi-level bi-phase modulation or multilevel quadrature phase modulation. Again, McCorkle does not teach or suggest that data can be encoded on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position.

Although, McCorkle states in paragraph 0077 that the device described therein is able to combine the use of PPM with other modulation schemes that manipulate the shape of the pulses to enable more data bits to be contained per channel symbol transmitted, this is not a teaching or

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

suggestion that data can be encoded on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position. In short, the AAPA in view of McCorkle does not disclose, teach or suggest the encoding of data on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position.

In addition to the fact that the AAPA in view of McCorkle does not contain each element of the claimed invention, it should be noted that, even if all the elements of the present invention were present in the AAPA and McCorkle, which they are not, no objective factor has been specifically set forth why a person of ordinary skill in the pertinent art would be motivated to combine the respective references. As stated by the Federal Circuit in *In re Lee*, 277 F.3d 1338, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002):

The need for specificity pervades this authority. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reasons the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); *In re Rouffett*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine to render the claimed invention obvious.") *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

The Examiner has given no objective factor that would motivate a person of ordinary skill in the pertinent art to refer to the respective references and then to combine them. There is no teaching

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

or suggestion in McCorkle that it should be combined with the AAPA nor is there any suggestion of the desirability of such a combination. As stated in *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990), "[t]he mere fact that ... disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination." *In re Imperato*, 486 F. 2d 585, 587, 179 USPQ 730, 732 (CCPA 1973). "The mere fact that the prior art could be modified in the manner proposed by the examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification." *Ex parte Dussaud*, 7 USPQ 1818, 1820 (Bd. App. & Int'f 1986).

Finally, even if all the elements of the present invention had been present in the AAPA in view of McCorkle, the combination of the AAPA and McCorkle would not enable the present invention. If McCorkle had stated that the device described therein can be used to encode data on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position, this in itself would be insufficient disclosure to enable a person of ordinary skill in the pertinent art to practice the present invention.

Thus, the AAPA in view of McCorkle fails to teach or suggest the invention recited in independent Claim 11 and its dependent claims, when considered as a whole. Claims 11, 13-17 and 19-20 are therefore not obvious over the AAPA in view McCorkle.

With respect to the Examiner's rejection of Claim 12 as being unpatentable under 35 U.S.C. §103(a) over the AAPA in view of McCorkle and further in view of Maggio, the foregoing arguments are equally applicable to Claim 12 which is dependent on Claim 11. Maggio does not

Appl. No. 10/062,833

Reply to Examiner's Action dated July 12, 2005

overcome the shortcomings of McCorkle discussed above. Therefore, Claim 12 is not obvious over the AAPA in view of McCorkle and further in view of Maggio.

With respect to the Examiner's rejection of Claim 18 as being unpatentable under 35 U.S.C. §103(a) over AAPA in view of McCorkle and further in view of Burke, the foregoing arguments are equally applicable to Claim 12 which is dependent on Claim 11. Burke does not overcome the shortcomings of McCorkle discussed above. Therefore, Claim 18 is not obvious over the AAPA in view of McCorkle and further in view of Burke.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 11-20 under 35 U.S.C. §103(a). The Applicants therefore respectfully request the Examiner to withdraw the rejection.



Appl. No. 10/062,833  
Reply to Examiner's Action dated July 12, 2005

### III. Conclusion

As required by the Examiner, contemporaneous herewith the Applicant is submitting a Statement of the Substance of Applicant Initiated Interview in Accordance with C.F.R. § 1.133(b)

In view of the foregoing remarks, the Applicant now sees all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 11-20.

The Applicant requests the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

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